

Example #6: A cart accelerates from 0 to 15 m/s in 60 sec. What power is developed if the mass of the car is 20. kg?

$$P = \frac{W}{t} = \frac{\Delta E_k}{t} = \frac{\frac{1}{2}mv_f^2 - \cancel{\frac{1}{2}mv_i^2}^0}{t}$$
$$= \frac{\frac{1}{2}(20)(15)^2}{60}$$

$$P = 38 \text{ W}$$